

REMARKS

Claims 1-9 and 11-14 are all the claims pending in the application.

I. Rejection of Claims 1-9 and 11 under 35 U.S.C. § 103(a)

Claims 1-9 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chandross et al. (US 3,809,732) in view of JP 2002-356615 and JP 8-320422.

Applicants respectfully traverse the rejection.

Claim 1 is directed to a process of manufacturing an optical waveguide for optically connecting a plurality of optical devices, comprising the steps of: disposing a resin composition between two or more optical devices, the resin composition comprising a resin and a 1,4-dihydropyridine derivative, wherein the resin comprises at least one member selected from the group consisting of a polyamic acid, a polyimide and a polyamide-imide, forming an optical path through the resin composition between the optical devices by allowing light having a wavelength capable of inducing a structural change in the 1,4-dihydropyridine derivative to pass through the composition for optical connection to thereby form, in the composition for optical connection, an irradiated part containing a 1,4-dihydropyridine derivative that has been exposed and undergone structural change and a non-irradiated part containing a 1,4-dihydropyridine derivative that has not exposed and not undergone structural change, wherein the optical path comprises the irradiated part, and after the optical path formation, removing the 1,4-dihydropyridine derivative that has not undergone structural change from the non-irradiated part while retaining the 1,4-dihydropyridine derivative that has undergone structural change in the irradiated part, thereby making higher a refractive index of the optical path than a refractive index of the other part of the composition for optical connection.

JP '615 is directed to a photosensitive polyimide precursor composition containing a

polyimide precursor and a 1,4-dihydropyridine derivative. The 1,4-dihydropyridine derivative is not a polyimide precursor, but is used as a sensitizing agent for imparting photosensitivity to the polyimide precursor, thus providing a photosensitive polyimide precursor layer 2. *See* Fig 1(A). Patterning of the photosensitive polyimide precursor layer 2 is carried out, utilizing the photosensitivity, through UV irradiation, post exposure baking (PEB), development, etc., thereby obtaining a core pattern layer 4. *See* Figs. 1(B) and 1(C). Specifically, the non-irradiated parts of the polyimide precursor layer 2 is removed by development, using a developing solution. *See* [0027] and [0034] of English machine translation of JP '615 submitted herewith, and Fig. 1(C). The irradiated parts of the polyimide precursor layer 2 after the development is subjected to imidization to provide the core pattern layer 4 made of polyimide.

Although JP '615 discloses the removal of the non-irradiated parts of the polyimide precursor composition layer *per se*, it provides no teaching or suggestion as to removal of the "1,4-dihydropyridine derivative" from the non-irradiated parts of the composition layer. Furthermore, since the non-irradiated parts in the invention of JP '615 are removed by development, it has absolutely nothing to do with the concept of causing a difference in refractive index between the irradiated parts and the non-irradiated parts by removing the 1,4-dihydropyridine derivative from the resin composition.

Throughout JP '615, the development step is directed to physical removal of part of the photosensitive polyimide precursor layer as shown in Fig. 1(B) and 1(C). This is fundamentally distinct, literally and technically, from the presently claimed removing step.

As shown above, JP '615 uses the 1,4-dihydropyridine derivative for completely different purpose and function from the purpose/function of the dopant in Chandross, and the patterning process of JP '615 (removing the non-irradiated parts by developing with a developing solution) is considerably different from the process disclosed in Chandross. Accordingly, there is no

suggestion or motivation to replace the dopant of Chandross with the 1,4-dihdropyridine derivative of JP '615 as proposed by the Examiner. Thus, one of ordinary skill in the art would not arrive at the claimed invention.

For at least the foregoing reasons, it is respectfully submitted that the present invention according to claim 1 is patentable over the cited art.

In addition, claims 2-9 and 11 depend, directly or indirectly from claim 1, and thus it is respectfully submitted that these claims are patentable for at least the same reasons as claim 1.

In view of the above, withdrawal of the rejection is respectfully requested.

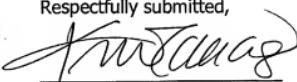
II. Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1-9 and 11-14 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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